THE PLANT DISEASE BULLETIN

Issued By

THE PLANT DISEASE SURVEY

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THE PLANT DISEASE BULLETIN

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Vol. VI. October 1, 1922. Number 7

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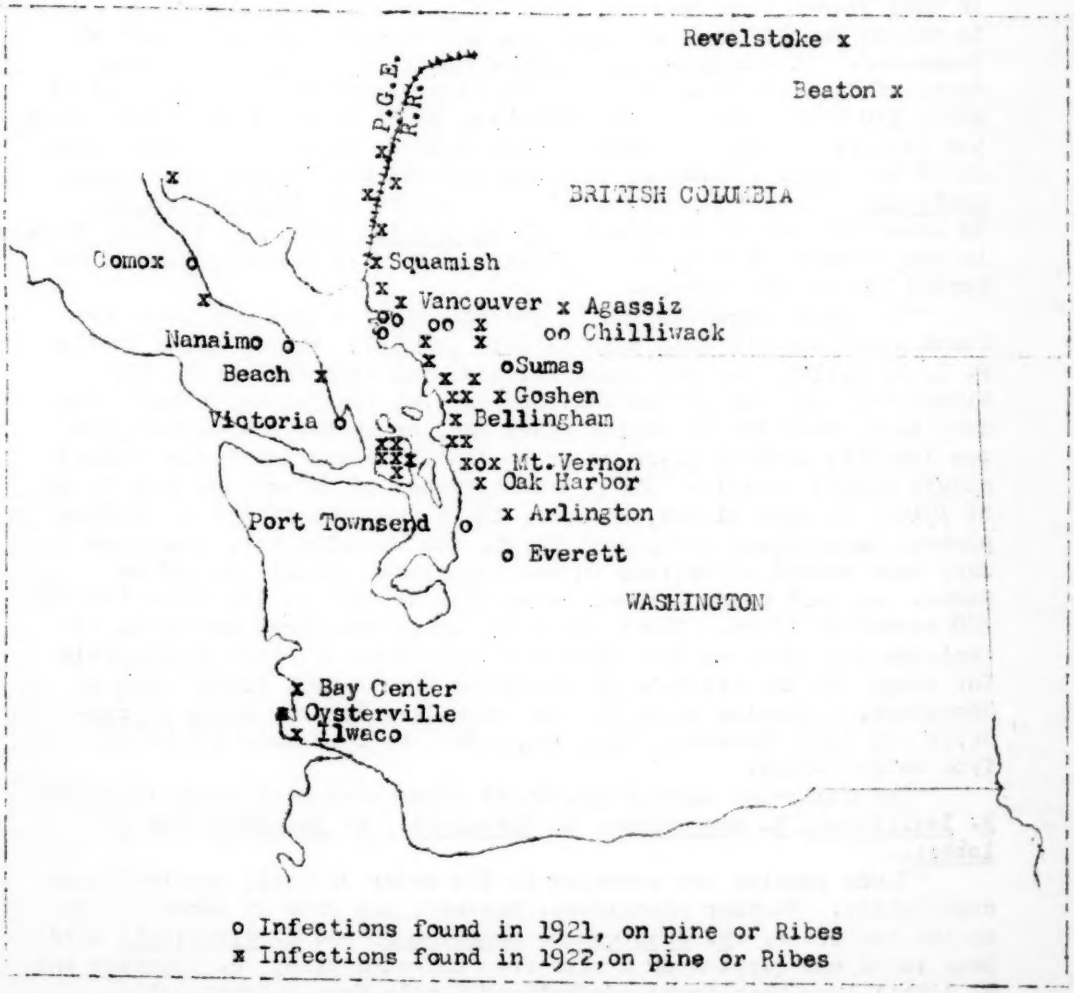

Fig. 10. Distribution of the white pine blister rust in British Columbia and Washington. (After map by Office of Blister Rust Control).

THE WHITE PINE BLISTER RUST SITUATION IN BRITISH COLUMBIA AND WASHINGTON

In the confidential news letter for blister rust workers of August 31, 1922 the Office of Blister Rust Control presents statements by L. H. Pennington, G. B. Posey, and R. G. Pierce concerning the blister rust situation in British Columbia and Washington, together with a map showing the present known geographic distribution of the disease in this same region. With the consent of the Blister Rust Office these statements and map are reproduced herewith.

Blister rust conditions in British Columbia up to July 31, 1922.

"Up to the present the rust has been found upon Pinus monticola in many places from Agassiz, some fifty or sixty miles east of Vancouver, to points beyond Thurston Bay, some 140 to 150 miles northwest of Vancouver. It has been found inland north of Vancouver 75 miles north of Squamish along the Pacific Great Eastern Railway. This is about 110 miles north of Vancouver and practically at the place where the railway passes the summit of the Cascade Mountains. This place is in the Pinus albicaulis belt and infection was found upon Pinus monticola within a few miles of an abundance of Pinus albicaulis. No infection was found upon the P. albicaulis examined. If this species is not already infected in some places, it will probably become infected in the near future.

"At North Vancouver and at Thurston Bay, infections have been found which seem to date back to 1911 or 1912; thirty miles up the P. G. E. Railway one was found which seemed to date back to 1913. Either the rust was introduced into several localities at about the same time, some ten or twelve years ago, or it was introduced into one locality several years prior to that time and had become rather widely spread by 1912. The greatest number of infections seem to be of 1916. In some places, however, there are many of 1917. In some places, as at Daisy Lake, Bold Point, and Thurston Bay, there are many more recent infections in the immediate vicinity of native Ribes. In most cases serious infections are within 100 yards (rarely 200 yards) of Ribes. There are a few instances where scattered infections are found up to a mile from the block of Ribes responsible for them. In the vicinity of Vancouver and in most places east of Vancouver, infection seems to have come largely from Ribes nigrum. North and west, however, there seems to have been more infection from native Ribes.

"The following species of native Ribes have been found infected: R. laxiflorum, R. sanguineum, G. divaricata, R. lacustre, and G. lobbii.

"These species are arranged in the order of their apparent susceptibility. Further experience, however, may make it necessary to change the order. R. bracteosum, sanguineum, and G. divaricata have been found one quarter of a mile from infected pine; R. lacustre and G. lobbii have been found one half of a mile from infected pine. Leaves of all except G. lobbii have been as heavily infected as any of R. nigrum in the vicinity of infected pines. Weather conditions have not favored uredinial spread." (L. H. Pennington, July 31).

Discovery of blister rust in another part of British Columbia

"On August 28 infection was found on black currants by the Canadian scouts at Revelstoke and Beaton, British Columbia, approximately 250 miles northeast of Vancouver. Revelstoke and Beaton are situated about 135 miles and 110 miles respectively north of the international boundary, in a valley the drainage of which is southward through the Columbia River. They lie within the belt of the western white pine in eastern British Columbia, and are directly connected with the white pine stands of the Inland Empire. Should these infections prove to be so extensive as to be beyond hope of eradication, the white pines of the Inland Empire would be directly threatened by the disease." (G. B. Posey, August 31).

Blister rust in the state of Washington, by R. G. Pierce

"In the fall of 1921, infection was found on cultivated black currants at Sumas, Mt. Vernon, Beverley Park, and Port Townsend, and on Pinus strobus at Mt. Vernon; the latter infection dating from 1917.

"In 1922, blister rust had been found on black currants in Northwestern Washington at Birch Bay and Deming in Whatcom County; at Edison and Clearlake in Skagit County, and on Pinus monticola at Blaine in Whatcom County; the infection on the latter being of 1917 origin.

"Since August 1, Mr. Posey reports 38 additional blister rust infections have been found on black currants in this section, as follows:

'Whatcom County: Birch Bay, Licking, Laurel, Bellingham (4 locations), East Bellingham, South Bellingham, Brennan, Marietta (3 locations), Ferndale, Geneva, Blaine (2 locations), Goshen.

'Skagit County: Edison, La Conner, Sedro, Woolley.

'Island County: Oak Harbor (6 locations), Green Lake.

'San Juan County: Friday Harbor, Squaw Bay, Olga (2 locations), Doe Bay (2 locations), East Sound, Port Stanley, Richardson.'

"Previous to August 1 no infections of blister rust had been found south of Port Townsend and Port Angeles, at the extreme northern end of the Olympic Peninsula. Since this date, 9 infections on black currant have been found in southwestern Washington along the coast of Pacific County, between Ilwaco and Bay Center, as follows:

Pacific County: Ilwaco (5 locations), Oysterville (2 locations), and Bay Center (2 locations).

"Scouting in this region since the location of these infections has not revealed the presence of any native white pines or the presence of the disease on any planted white pines. This fact, coupled with the severity of the infection on black currants, points strongly to the assumption that the disease may have overwintered on the black currants. Both native and planted Ribes are being carefully inspected in this region and also along the northwestern coast of Oregon, across the Columbia River from Ilwaco."

RECENT REPORTS ON CORN DISEASES

During September, corn smut (Ustilago zeae) has been reported by collaborators in Vermont (much more abundant than in recent years), Mississippi (common again this season, on the whole about the same as last year,

damage slight), Texas (fairly prevalent), Wisconsin (present about as usual), Colorado (observed but no definite data as to prevalence or severity).

Corn root rot, caused by Fusarium spp., is reported by Temple and Jehle of Maryland as severe on all varieties of sweet corn, causing a loss to that crop of about 15%. D. C. Neal of Mississippi also states that it is very prevalent, as usual, and no doubt the cause of considerable loss. In Wisconsin an undetermined fungus was causing root rot in certain old sweet corn areas.

Bacterial wilt of sweet corn, caused by Bacterium stewartii, is reported from Maryland and Mississippi as follows:

> Maryland: Very severe on Golden Bantam, but rarely found on the canning varieties, such as Stowell's Evergreen and Country Gentleman. (Temple and Jehle, September 1).
>
> Mississippi: Reported from Harrison County, near Biloxi by K. L. Kockerham of the Bureau of Entomology, as causing considerable damage in a garden planting. (Neal, September 1).

Black mold on corn (apparently Aspergillus niger) is quite prevalent in Texas where it is causing about 2% injury, according to J. J. Taubenhaus.

Corn rust (Puccinia sorghi) is reported by D. C. Neal of Mississippi on September 1, as follows:

> "Rather severe this season in many of the southern counties, especially on the late planted corn. Reported as particularly serious in Fayette and Pearl River Counties."

LACK OF SPRAYING APPLES THE CAUSE OF GREAT DAMAGE

The following percentages of disease were determined by Mr. F. J. Schneiderhan of the Virginia Experiment Station in a plot of unsprayed Northwestern Greening apples in the vicinity of Winchester, September 19. These determinations go to show what may happen in at least parts of the Appalachian Mountain fruit belt when spraying and other important orchard practices are neglected. Three hundred apples were counted in the plot with the following results:

Blotch	100%	Coddling moth	16%
Scab	60%	Curculio	6%
Black rot	13.3%	Scale	1%
Cedar rust	1%		

MORE APPLE SCAB REPORTS

The following reports from important northern apple states are of interest:

> New Hampshire: Diseased fruit (even Baldwins) unusually abundant. (Butler, September 1).
>
> Maryland: Scab very severe on all unsprayed orchards and even on some sprayed orchards. This disease is becoming more important in apple production each year. (Temple and Jehle, September 1).

Michigan: Very common throughout state on unsprayed trees and on trees where a delayed dormant or pre-pink spray was not applied. Early infection caused the loss of many of the young fruits. In some instances leaf attacks were very destructive and trees were almost defoliated in mid-summer. (Division of Botany, Sept. 1).

Wisconsin: More scab in Door County than usual. Especially bad on Dudley. Some fall scab showing along lake shore. (Vaughan, September 1).

APPLE BLOTCH AS REPORTED FROM MARYLAND, MISSISSIPPI, AND TEXAS

Maryland: Owing to hot weather in June, blotch appeared unusually early this year, and many orchardists did not spray early enough to control it. Loss for state 5%. (Temple and Jehle, September 1).

Mississippi: Blotch is very prevalent and severe this season, especially in the northern counties of the state. It has also been reported and specimens received from many of the southern counties. Many growers are complaining that notwithstanding the following up of the usual spraying schedules for blotch, control of the disease has not been effected. (Neal, September 1).

Texas: Quite common, 5% loss. (Taubenhaus, September 1).

MORE RECENT REPORTS ON FIRE BLIGHT OF APPLE

Maryland: Blight was more severe than during either of the past two years. (Temple and Jehle, September 1).

Mississippi: Very prevalent again this season all over the state. Damage at least 6% for the entire state. (Neal, September 1).

Michigan: In some sections very severe on young trees. Twig blight destructive in southern part of state. Fire blight over state as a whole more destructive than during an average season. (Division of Botany, September 1).

Wisconsin: No new outbreaks reported. Disease seems to have stopped running. Loss in Western orchard, Dunn County severe, especially on McMahon. This variety will be cut out in winter. Transcendent crabs were cut out last year, but did not stop the blight. (Vaughan, September 1).

COLLABORATORS' REPORTS ON PEAR BLIGHT

Maine: Past experience has shown that this disease is, as a rule, rare and of little economic importance in Maine, but have seen more evidence of it this season than during the entire 15 previous years. (Morse, August 18).

New Hampshire: Scarce and not destructive. (Butler, September 15).

Vermont: Pear blight unusually common everywhere. It seems to have spread largely this summer as the infection is only present in this year's growth, (Lutman, September 15).

Massachusetts: More than usually prevalent and destructive. (Anderson, September 1).

New Jersey: Common but not serious. (Cook, September 15).

Delaware: Very prevalent. First observed June 16. More serious on pears than apples or quinces. (Adams, August 1).

Virginia: Very general and severe. (Fromme, August 1).

West Virginia: Exceedingly prevalent and destructive this year in all sections of the state. (Sherwood, September 15).

Georgia: Fire blight is more serious at this time. The Oriental strains, which are the most immune, are dying badly this year. On trees which have had the blighted limbs cut out this summer new infections started. We have several Chinese pears two to three years old, supposed to be immune to blight and so far none has shown up on them. (Miller, August 1).

Texas: Epidemic as blossom blight early in season; now as twig blight, 50% loss. (Taubenhaus, August 1).

Ohio: This season has been a marked contrast to the two previous. Outbreaks of fire blight have become epidemic. Where rigid care has not been taken to remove cankers and infected twigs as soon as noticed pear plantings have suffered very seriously and have become a serious menace to adjoining apple orchards as well. (Thomas, September 15).

Wisconsin: About as usual. Seen on few trees. Not as bad as on apple. (Vaughan, September 15).

PEAR BLIGHT IN CALIFORNIA

In a letter from the California Fruit Exchange, dated September 16, the following interesting information concerning pear blight in the important pear state of California was communicated:

> "All sections of the state from Lake County to Los Angeles, have suffered more this year from the ravages of pear blight, than any previous year in the past ten. The blight attacked the trees at different stages, from the blossoming period into the late summer. It also attacked pears half grown, to the extent that they turned black and shriveled. Many orchards have lost whole trees.
>
> "The blight seemed to be prevalent among healthy trees of from five to ten years.
>
> "An orchardist on the Sacramento River informed me that his loss

was about 12,500 boxes of pears out of a crop estimated at 60,000.

"Placer County, that has been practically immune from blight to any serious extent except twig blight, was hit about as hard as any district. Growers in some sections, and my own orchard included, were compelled to cut a great many trees almost to the stump. I noticed also that irrespective of the extreme care that was exercised in attempting to eradicate the blight after the infected portions of the tree had been cut and the wounds disinfected, that the blight would reappear in other portions of the tree a week or ten days later, which in many instances necessitated the tree being taken out of the ground entirely."

FIRE BLIGHT CONDITIONS IN BRITISH COLUMBIA

"In some districts of the Okanagan Valley, fire blight still remains a serious menace. During the winter months, an energetic campaign was carried on by the Provincial Horticulturist in an endeavor to get the growers to cut thoroughly, all blight cankers. A system was introduced by which all orchards were inspected and certificates given for orchards which were clean as far as could be ascertained from an inspection made by the District Representative.

"This campaign had, for the most part, a hearty cooperation among the growers and as a result, there is this year, much less fire blight in the valley than there was last year. The Salmon Arm, Westbank, Peachland, Summerland, Naramata, and Penticton districts are practically clean. At Vernon, Kelowna and Okanagan Centre where fire blight has for years been very active, the results have not been as good as in the other districts.

"It is difficult, however, to give an accurate estimate of the losses sustained. In those orchards in which the disease is active, the loss will be heavy in both pears and apples. It will perhaps be sufficient to say that, to certain larger owners, the losses will be counted in thousands of dollars.

"In these orchards, a rapid spread of the disease took place during the blossoming period; but due to weather conditions, did not at once develop. Later on, as weather conditions became more favorable, the organism became more active, causing a serious twig blight. A considerable amount of summer cutting was done as the disease first became evident; but later, this was stopped and only those branches were cut which threatened to carry the disease to important branches or trunks.

"The outlook, on the whole, is promising. If every year, as good progress can be made as was made this year, pears can yet be grown profitably in these districts. As soon as the absolute necessity of winter cutting is sufficiently impressed on the minds of the growers, the blight problem will be practically solved." (H. R. McLarty, Summerland, B. C., August).

PEAR SCAB (VENTURIA PYRINA)

Pear scab has been reported during September from a large number of states where apple scab is prevalent. It seems to be common over the northeastern and eastern parts of the country. It is reported from Washington and Oregon, but is much less severe in those states than usual on account of the dry season.

LEAF AND FRUIT BLIGHT OF PEAR ABUNDANT AGAIN THIS YEAR

Reports from Connecticut and the Middle Atlantic Coast region as well as from Illinois show that the leaf and fruit blight of pear caused by Fabraea maculata is very abundant again this year and causes serious damage. In western Maryland, pear orchards were observed where practically all the leaves had fallen on account of the disease and the fruit that remained on the branches were badly spotted. In Illinois, according to Anderson, it appeared quite generally on Kieffers which are considered more or less resistant to this disease.

FOLIAGE SCALDING OF PEARS IN WASHINGTON REPORTED BY B. F. DANA

"In many cases in commercial and private orchards extensive scalding of foliage has appeared in alarming severity. The sudden advent of dry hot weather following a cool period when water supply was abundant, seems to be the inciting factor. The Bartlett is affected most severely. The Kieffer and D'Anjou in the same situation as the Bartlett were not affected."

PEACH SCAB ABUNDANT

Judging from the accompanying reports, peach scab (Cladosporium carpophilum) has been more than usually severe this season:

Connecticut: Above the average. (Clinton, September 1).

New York: Very prevalent on Long Island. (Clayton, August 26).

Maryland: Scab was unusually severe in unsprayed orchards, causing fruit to crack and making conditions favorable for rot. Even in sprayed orchards much scab developed. (Temple and Jehle, September 1).

Ohio: Very prevalent throughout the state. Infection severe upon late varieties such as lemon free. Very excellent control accomplished wherever spraying has been thoroughly done. The leaf spot disease associated with a Cladosporium, thought to be the same organism, has caused serious defoliation in many orchards. (Thomas, Sept. 1).

Illinois: Not serious from a commercial standpoint, but quite prevalent this season. More than I have ever seen before. Usually in unsprayed orchards. Some loss in farmer's orchards. (Anderson, September 1).

Kansas: Present generally in unsprayed orchards. Seedling peaches badly affected, causing 50% of them to be worthless. Present on plums in Horticultural orchard. (Stokdyk, September 1).

Reports continue to the effect that it is present practically everywhere peaches are grown in Kansas. (Stokdyk, September 15).

California: K. A. Ryerson sends the information that scab is rather bad in places in San Fernando Valley. (W. T. Horne, August 15).

ROSETTE AND DROUTH SPOT OF PLUM AS REPORTED BY B. F. DANA FROM THE STATE OF WASHINGTON

"One very serious case of rosette on Burbank plum was observed in the Snake River section. Trees were just coming into bearing, having been set in a block from which old peach trees had been removed." (September 15).

"Drouth spot is reported as severe in the Walla Walla and Kennewick sections. Not as severe as has been reported in past seasons." (September 15).

STRAWBERRY YELLOWS

In Plant Disease Bulletin 6: 77, August 15, 1922, is given a report of strawberry yellows as it occurred in Minnesota this year. Regarding this, H. W. Anderson of Illinois writes as follows: "We observed this as serious in one variety, Minnesota No. 3, this season. Last year we observed a similar disease on another variety. I believe I reported this under 'mosaic'. It was different from the yellows observed this year in that the leaves were more curled and not so yellow."

In 1920 a "chlorosis" of strawberries was reported to the Survey from Minnesota and in 1921 Anderson reported a similar trouble from Illinois.

INFORMATION ON RASPBERRY LEAF CURL AND MOSAIC DESIRED BY THE SURVEY

Collaborators and others are asked to contribute whatever information they can on the occurrence of and losses occasioned by these two raspberry diseases. They are asked to distinguish between the two troubles wherever this is possible. For your information, we are giving a map showing the locations of counties from which these diseases have been reported to the Survey since 1908. In most cases they reported under the name "yellows".

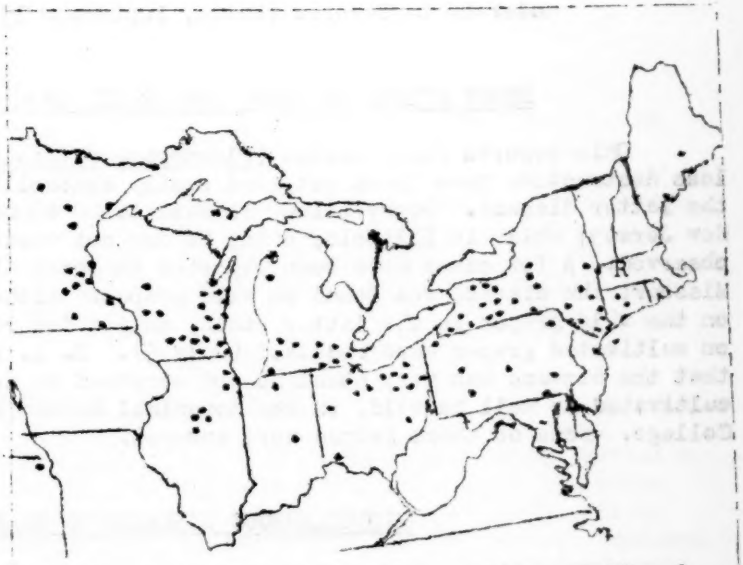

Fig. 11. Geographic distribution of raspberry yellows. (Each dot represents a county from which the disease has been reported to the Plant Disease Survey).

ADDITIONAL REPORTS INDICATING LOSS FROM BLACK ROT OF GRAPE

In addition to those quoted below, reports from New York (Orange County) and Texas state that black rot of grape is widespread and is causing considerable damage. It will be noted that the reports from New Jersey, Ohio, and Illinois mention the importance of proper spraying as a factor in reducing the loss from this disease.

New Jersey: Common but not serious where the spraying is done properly. (Cook, September 15).

Ohio: Black rot has been commonly prevalent in Ohio during the season of 1922, indeed, so generally, that no portion where grapes are grown has there been an escape from black rot. Possibly there has been developed a habit to omit the necessary Bordeaux sprays, as few grapes were matured successfully where the practice of spraying has not been followed. (Selby, September 15).

Illinois: Some loss on unsprayed vineyards. Noticed it worst on vineyards near forests along river banks. Woodbine and wild grape vines are very abundant in these parts. (Anderson, September 15).

Kansas: Fairly common this year in the southeast portion of the state, and evidently on the increase. Reported from Clay, Cherokee, Cloud, and Lyons Counties as from slight to moderate as well as from Montgomery, Labette, and Chautauqua Counties, where it was moderate to severe. (White, September 15).

DOWNY MILDEW OF GRAPE APPARENTLY UNIMPORTANT

Ohio reports downy mildew (Plasmopara viticola) as very prevalent but less destructive than black rot, and easily controlled by the treatment for the latter disease. Downy mildew is said to be common but unimportant in New Jersey; while in Illinois, owing to dry hot weather, it has been rarely observed. A few cases have been reported in Iowa. In West Virginia and Missouri the disease was found on wild grapes. Although it was very abundant on the wild grapes in the latter state, only a few reports of its occurrence on cultivated grapes were received (July 5). E. A. Bessey reports (July 11) that the disease was very abundant and occurred on nearly all species of grapes, cultivated as well as wild, in the Botanical Garden of the Michigan Agricultural College. None of these grapes were sprayed.

MISCELLANEOUS DISEASES OF GRAPE

Powdery mildew (Uncinula necator) is reported (September 15) from Ohio, where it is said to be general, but unimportant where spraying is done for black rot; and from Illinois, where it is doing damage less than last year, owing to its late appearance.

Anthracnose (Gloeosporium ampelophagum) is said to be unimportant in Ohio and Kansas.

Crown gall (Bacterium tumefaciens) - Ohio: Frequent upon grape and is guarded against where grape cuttings are grown (Selby, September 15).

Dead-arm (Cytosporella viticola) - Leavenworth and Lyons Counties, Kansas (R. P. White, September 15).

Root rot (Ozonium omnivorum) - very severe in Texas (September 15).

VERMONT REPORTS ON CABBAGE DISEASES

B. F. Lutman of Vermont has submitted the following reports on cabbage diseases as of October 1. Attention is called particularly to the lack of heading on sandy soils and to the fact that information on this subject is desired from other states.

Lack of heading. My attention has been called to the local lack of heading of cabbage on sandy soils. The plants instead of heading seem to have a tendency to run up into a number of shoots or to form only leaves without a head. The plants are often dwarfed as in club root, but no disease seems to be present on the roots and there are plenty of roots.

Would like to hear if other states are afflicted in the same way.

Black rot (Pseudomonas campestris) occurs much more commonly than last year but is not seriously destructive. It is much above the average, however.

Soft rot (Bacillus carotovorus) is much more common than last year and always spoils the heads where it gets a good start. Will be some loss from it this year, probably not over .5%.

MARYLAND AND KENTUCKY REPORT ON CABBAGE YELLOWS

Maryland: Becoming more severe every year. Loss for state 10%. (Temple and Jehle, September 1).

Kentucky: Mr. Gardner reports that in a test of the Iowa strain of Copenhagen Market (resistant), Wisconsin All Seasons (resistant), and ordinary Charleston Wakefield, the extent of infection was 5%, 1%, and 85%, respectively. This was in soil which produced a complete failure last year. (Valleau, August 15).

BACTERIAL BLIGHT OF BEAN

Vermont: (From a letter from the County Agent of Grand Isle County, Vermont's important bean section). Blight is the worst disease among the beans this year and is quite prevalent throughout Grand Isle County. Early planted beans have suffered most, as the protracted wet weather followed by a hot dry period seemed to make conditions especially favorable to blight. The late planted and replanted beans are not so badly infected. It is much more general than last year and seemed to start between the first and fifteenth of August. (Lutman, September 1).

West Virginia: Very little of this trouble seen this year. (Sherwood, August 15).

Kentucky: Practically coincident with crop. (Valleau, August 15).

Wisconsin: Widespread. Actual damage difficult to determine. Early Black Valentine very susceptible. Late Refugee quite resistant. (Vaughan, September 1).

Minnesota: Light infections in Ramsey and Hennepin Counties. About the usual amount of blight and not very destructive. (Section of Plant Pathology).

Colorado: This disease has been located in several gardens about Fort Collins, but is of no consequence. (Learn, August 15).

BEAN ANTHRACNOSE REPORTS

New Hampshire: More injurious in infected fields this year than last. (Butler, September 1).

Vermont: Anthracnose is quite generally prevalent but not nearly in so marked a degree as blight. It is, however, more general than last year. It seemed to start about the same time as blight. (From a letter from the County Agent of Grand Isle County). (Lutman, September 1).

Maryland: Very little this year. (Temple and Jehle, September 1).

Wisconsin: Not severe, too dry weather. French Horticultural, no anthracnose; Dwarf Horticultural, heavily infected. (Vaughan, September 1).

Minnesota: Moderately heavy in Hennepin and Ramsey Counties. (Section of Plant Pathology, September 15).

REPORTS ON BEAN MOSAIC

Vermont: A surprisingly small amount of mosaic. (Lutman, September 1).

Kentucky: Have found mosaic in Kentucky Wonder bean. Appeared to be seed infection. (Valleau, August 15).

Wisconsin: Sprag Early Wonder, highly susceptible; White Marrow, medium mosaic; Late Refugee, have a lot of mild mosaic. (Vaughan, Sept. 1).
Scattering plants found in most fields. Dry bean growing is not an important industry in Wisconsin. (Vaughan, September 15).

Minnesota: First observed June 16. Rather common. About as usual. (Section of Plant Pathology).

Oregon: General and often 90-100% of the plants in a field may be attacked. C. E. Stewart, Fruit Inspector, Cottage Grove, Lane County, reports relative infection of three varieties as follows: Bayos 1%, White Mexican 3%, Berrendos, free from mosaic. The crop of beans is very light on account of the drouth this year. (Barss, September 1).

ROOT ROT OF BEAN IN GRAND ISLE COUNTY VERMONT

In a recent letter from the County Agent of Grand Isle County, Vermont to B. F. Lutman, it is reported that, "Root rot was also found quite generally, the wet season favoring its development. Beans in wet low land which has been cropped to beans for two or more seasons seemed to show the greatest effect from rot. However, the amount of root rot in comparison with the blight and anthracnose is small."

The causes of this root rot are not clear, but it is known that the Fusarium martii phaseoli that occurs in New York has also been isolated from Vermont material and it is likely that this fungus is a contributing factor.

ADDITIONAL REPORTS CONCERNING TOMATO LEAF SPOT

Masschusetts: More cases reported from this state than ever before. (Anderson, September 1).

Connecticut: About as usual. One complaint of serious injury. (Clinton, September 15).

New Jersey: Abundant. (Cook, September 15).

Virginia: Defoliation from Septoria is complete throughout the western section at this date except on sprayed vines. (Fromme, September 15).

Kentucky: Reported as serious from several parts of state. More than last year. (Valleau, August 15).

South Carolina: Very common locally. I estimate a 15% loss in this neighborhood. County agents' estimates vary, but are of similar magnitude. (Ludwig, September 15).

Ohio: The leaf spot disease seems to be very much localized. For the state as a whole very slight loss occurred. In certain local sections, however, the infection is moderately severe. (Thomas, September 15).

Michigan: Many reports, general distribution in first half of season. Disease checked by hot, dry August. (Division of Botany, September 15).

Wisconsin: Less common than usual. Evidently checked by dry weather. I know of no spraying for this disease. (Vaughan, September 15).

Minnesota: Very common throughout the state. Abundant in Ramsey and Hennepin Counties, causing considerable injury to the vines in some cases. (Section of Plant Pathology, September 15).

Kansas: Present in usual amounts. This is an enphytotic disease here, causing damage each year. Reports have come in that satisfactory control was not obtained with Bordeaux this season. (White, September 15).

Colorado: This disease has not been reported from any section, but I have noticed it quite commonly in the gardens about Fort Collins. (Learn, August 15).

FUSARIUM WILT OF TOMATO

Reports from Connecticut, New Jersey, and Wisconsin indicate that Fusarium lycopersici is of little importance in those states. The following reports from states where the disease is severe are of especial interest:

South Carolina: County agents report this disease as common and causing considerable damage and we have had four specimens of of the disease submitted for diagnosis. One of these was a Norton, grown in my garden, which was killed after showing the disease for something like two or three weeks. (Ludwig, September 15).

Ohio: Losses very severe in southern Ohio. The disease is evidently spreading from year to year. It is remarkable how many home gardens there are in the state that show the presence of the Fusarium wilt disease. Sources of such infection can generally be traced to greenhouses and hot beds where plants were grown. (Thomas, September 15).

Kansas: Very severe this season, starting early in June to kill plants and getting progressively worse as the season advanced. Investigations on wilt resistance are under way and promising results have been obtained in breeding work. This disease is on the rapid increase here without any doubt, both in distribution and in destructiveness. (White, September 15).

REPORTS ON TOMATO MOSAIC FROM NEW JERSEY, MICHIGAN, MINNESOTA, AND KANSAS

In New Jersey, although it is common, mosaic is said to be less serious than usual; and in Michigan and Kansas it is apparently not very important. The following report from Minnesota is interesting:

"Quite generally present throughout the state. Very heavy in some fields in Ramsey and Hennepin Counties. Heavy infection on Solanum nigrum was found in tomato seed beds early in the season." (Section of Plant Pathology, September 15).

REPORTS OF BLOSSOM-END ROT OF TOMATO

In addition to those quoted below, reports of blossom-end rot have been received from Virginia, Michigan, Minnesota, and Washington.

West Virginia: About usual amount, but severe in a few local sections where dry weather prevailed in August. (Sherwood, September 15).

South Carolina: County agents report this as abundant, with losses running as high as 70%. This loss, however, probably includes all rots which start at the blossom end; since diagnosis, especially in the field, is difficult. Have noted a few cases locally where the disease seemed to depend on weather conditions. (Ludwig, September 15).

Arkansas: Severe on account of drouth. (Elliott, August 11).

Ohio: Following the period of extended drouth throughout August, loss due to the blossom-end rot is quite severe in certain sections, especially affected by the drouth. This caused the greatest loss of any disease. (Thomas, September 15).

Wisconsin: Fewer reports of loss this year than last year. (Vaughan, September 15).

Oregon: Not reported except from the Willamette Valley where the damage has not been large so far this year on the whole as far as reported. Fruit Inspector Stewart of Lane County, however, says that there is the usual 20-25% loss as usual except where there is irrigation in which cases there is none present. There is probably more or less of this trouble in the state wherever tomatoes are grown, although not reported often. (Barss, August 15).

A TOMATO LEAF CURL REPORTED FROM KANSAS

"Very severe about the middle of July to the first of August at Manhattan. Leaves would curl tightly and remain in that condition for two weeks or more. Some plants never recovered completely. This condition arose about ten days after a severe aphid attack. Investigations are under way with filtered plant juices to see if any filterable virus may be responsible." (White, September 15).

TOMATO LATE BLIGHT

Virginia: Prevalent at Blacksburg and other points in southwest. Injury not as severe as was anticipated earlier in the season, but 50% loss of fruit from rot is common. (Fromme, September 15).

West Virginia: On late tomatoes late blight has spread throughout the central region of the state, extending westward almost to the Ohio Valley. Infection generally rather late, however; hence not so much damage as in 1920. Some patches in mountain section a total loss. (Sherwood, September 15).

PHOMA FRUIT ROT OF TOMATO FOUND IN OHIO THIS YEAR

Fruit rot caused by Phoma destructiva was reported to be causing slight loss in Washington County, Ohio. According to Thomas this is the first time the disease has been observed in the state. Fromme reports the disease as common but of relatively minor importance in Virginia.

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